



Rabort Greene Steme
Eate and 1 Maggine
Lorgo A. Coldate n Do. d K.S. Commun
Robert W. Esmand
Trony Gone G Durlin
Trop Gene G Deskin Middele A. Cimbela Middele B. Ray Rebert E Sekahi End C Stiffs Middele G Log Shill R. Lift g
Referet E Sejebi
En a IC Stuffla
Marria 6 tila
alina jih aaddag
T+13 ( T )
មិន ខេត្តប្រាក្
Lamborro B. Burn Sor
Lawrence B. Bugaisky Michael V. Massinger Ltd th U. Cm
Lied th U iCm T

Patrick E. Gorratt
Juffrey T. Mohrey
servey of herey
Hold, L. Kraus
Elforn L. E. son
Thomas C. F.a'a
Albert L. Ferro*
Danz'd R. Banowit
Peter A. Jackman
Teresa U Madfar
Confusion Reference
And the second s
1 1 71 1 172770
1. n. 3. 3. 5. 5. 5
212 2 622
2 0.2211. #33783
Jasoph S. Ostroff
Frank R. Cottingham
richen, conlightm
Christine M. LHE or

Roo kynn P. Guest Georga S. Berdinsser Daniel A. Klein Inten D. Eschberg Michael D. Specht Andrea I. Kamaga Treey L. Muller Les E. Whoght Les E. Summorf of An a U. and Intel
Prime C. Certien  Supplied D. Die 192  Graph Components  Let A. Sender  Nicele D. Dreter  Ted J. Ebersele  Jyot C. Lyer







February 22, 2005

WRITER'S DIRECT NUMBER: (202) 772-8587 INTERNET ADDRESS: PGARRETT@SKGF.COM

Mail Stop Amendment

Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

Re:

U.S. Utility Patent Application

Application No. 09/844,283; Filed: April 30, 2001

or: Methods and Systems for Adaptive Receiver Equalization

Inventor:

BUCHWALD et al.

Our Ref:

1875.0560003

Sir:

Transmitted herewith for appropriate action are the following documents:

- 1. Credit Card Payment Form (PTO-2038);
- 2. Fee Transmittal Form (PTO/SB/17);
- 3. Second Supplemental Information Disclosure Statement;
- 4. Ten (10) sheets of Form PTO-1449 listing ninety-two (92) documents;
- 5. Copies of sixty-seven (67) documents; and
- 6. One (1) return postcard.

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents February 22, 2005 Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Patrick E. Garrett Attorney for Applicant Registration No. 39,987

PEG/mlb Enclosures

343073\_1.DOC

Equivalent to Form PTO/SB/17 (12-04)

Approved for use through 07/31/2006.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE to a collection of information unless it displays a valid OMB control number Under the Panenunck R

Effect & An analysis 2004. Complete if Known							
Fees pursuant to the Consolidated	d Appropriati	•	Application Number	09/844,2	83		
FEE TRA	NS	MILIAL	Filing Date	April 30	, 2001		
For	FY 20	05	First Named Inventor	BUCHW	ALD et al.		
			Examiner Name	Zheng, I	Eva Y.		
Applicant claims small en	tity status.	See 37 CFR 1.27	Art Unit	2634			
TOTAL AMOUNT OF PAYME	NT (\$)	180.00	Attorney Docket No.	1875.0560	0003		
METHOD OF PAYMENT (	check all t	that apply)					
Check X Credit Car	rd M	Ioney Order No	ne Other (please	identify):			
X Deposit Account Depo					, Kessler, Gold	stein & Fox	P.L.L.C.
		ccount, the Director is he					
Charge fee(s) inc	dicated be!	ow	Charge fee	(s) indicated I	below, except	for the filin	g fee
Charge any addi	tional fee(s	s) or underpayments of fe		overpayment	•		<u> </u>
under 37 CFR 1. WARNING: Information on this fo			, ,	• •		e credit card	
information and authorization on	PTO-2038.						
FEE CALCULATION							
1. BASIC FILING, SEARCI	<b>H, AND E</b> FILING F		RCH FEES EX	AMINATION	LEEE		
	Sr	mall Entity	Small Entity	<u>Small</u>	Entity		
	Fee (\$)	Fee (\$) Fee (\$		_	<u>• (</u> \$)	Fees Paid	<u>(2)</u>
,	300	150 500	200	00 10	-		
	200	100 100		_	55 –		_
	200	100 300			- 50		—
	300	150 500	250	30	- 00		
	200	100 0	0	0	0 –		
2. EXCESS CLAIM FEES Fee Description							all Entity Fee (\$)
Each claim over 20 or, for F	Reissues,	each claim over 20 an	d more than in the or	iginal paten	it	50	25
Each independent claim over						200	100
Multiple dependent claims						360	180
	tra Claims	<u>Fee (\$)                                  </u>		<u>ltiple Depen</u> Fee (\$)	dent Claims Fee Paid (	(e)	
HP = highest number of total clair				ree (v)	ree raiu l	<u> 41</u>	
	tra Claims		Paid (\$)			<del></del>	
3 or HP = _ HP = highest number of independ	lent claims p	x = eaid for, if greater than 3					
3. APPLICATION SIZE FE							
If the specification and dr	awings ex					5 for small	entity)
for each additional 50						F D-	(6)
<u>Total Sheets</u> - 100 =	xtra Sheet	/ 50 =	ch additional 50 or fra round up to a whole			Fee Pa	iia (\$)
4. OTHER FEE(S)			_ (	,			Paid (\$)
Non-English Specificat	ion \$13	30 fee (no small entity	discount)			reesr	-aiu (ş)
Other: Information Di	•	·	2.200			180.0	00
SUBMITTED BY	-71		Registration No.		Telephone		
Signature as	<del></del>	arrett	(Attorney/Agent)	39,987	ļ. ————————————————————————————————————	(202) 371	-2600
Name (Print/Type) Patrick E.	Garrett				Date 2/8	1a/05	

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



In re application of:

Confirmation No.: 1013

BUCHWALD et al.

Art Unit: 2634

Appl. No.: 09/844,283

Examiner: Zheng, Eva Y.

Filed: April 30, 2001

Atty. Docket: 1875.0560003

For: Methods and Systems for

**Adaptive Receiver Equalization** 

Second Supplemental Information Disclosure Statement

Commissioner for Patents PO Box 1450 Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Appl. No. 09/844,283

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than

three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- \[
  \infty\] c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \$180.00 in payment of the fee under 37 C.F.R. §
   1.17(p).
- 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$\_\_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than

three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- 6. A concise explanation of the relevance of the non-English language document(s) appears below in accordance with 37 C.F.R. § 1.98(a)(3).
- Zopies of the documents listed in the sections entitled 'Foreign Patent Documents' and 'Other Documents' are enclosed. However, in accordance with 37 C.F.R. 

  § 1.98(a)(2), copies of the U.S. patents and patent application publications cited on the attached Form PTO-1449 are not enclosed.
- 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No.

BUCHWALD et al. Appl. No. 09/844,283

- 5 -

filed \_\_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

9. It is expected that the examiner will review the prosecution and cited art in the parent application no(s). \_\_\_\_\_ in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Patrick E. Garrett Attorney for Applicants Registration No. 39,987

Date:

1100 New York Avenue, N.W. Washington, D.C. 20005-3934 (202) 371-2600

2/22/05

366683\_1.DOC

FORM PTO-1449

SECOND SUPPLEMENTA
INFORMATION DISCLOSURE STATEMENT

Page 1 of 10

ATTY. DOCKET NO. APPLICATION NO. 1875.0560003 09/844,283

INVENTORS

Page 1 of 10

APPLICATION NO. 09/844,283

BUCHWALD et al. FILING DATE

ART UNIT

INFO	JRIVIATIO	N DISCLUSURE STATEM		FILING DATE April 30, 2001	ART 2634				
		· · · · · · · · · · · · · · · · · · ·		NT DOCUMENTS	1200.				
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE		
	AA1	5,396,224	03/1995	Dukes et al.					
	AB1	5,550,546	08/1996	Noneman et al.					
	AC1	5,554,945	09/1996	Lee et al.					
	AD1	5,614,855	03/1997	Lee et al.					
	AE1	5,703,905	12/1997	Langberg					
			FOREIGN PA	TENT DOCUMENTS					
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION		
INITIAL	AF1	EP 1 006 697	06/2000	EP	00.00	000 00 100	N/A		
	AG1	EP 1 139 619	10/2001	EP			N/A		
	AH1	WO 01/29991	04/2001	wo			N/A		
		OTHER DOCUMENTS	S (Including A	Author, Title, Date, Per	tinent Pages.	etc.)			
	AJ1	Conroy, C. et al., "An 8-b 85-MS/s Parallel Pipeline A/D Converter in 1-µm CMOS," IEEE Journal of Solid-State Circuits, IEEE, Vol. 28, No. 4, April 1993, pages 447-454.  Dally, W. and Poulton, J., "Transmitter Equalization for 4Gb/s Signalling," Proceedings of Hot Interconnects IV, Palo Alto, CA, 1996, 10 pages.  Ellersick, W. et al., "A Serial-Link Transceiver Based on 8GSample/s A/D and D/A Converters in 0.25µm CMOS," IEEE International Solid-State Circuits Conference, IEEE, 2001, page 58-59 and 430.  Ellersick, W. et al., "GAD: A 12-GS/s CMOS 4-bit A/D Converter for an Equalized Multi-Level Link," Symposium on VLSI Circuits Digest of Technical Papers, 1999, pages 49-52.							
	AK1								
	AL1								
	AM1								
	AN1	Eklund, J-E. and Gus Random Chopper Sa 28-31, 2000, pages II	mpling," IEEE	Digital Offset Compensa International Symposiu 150.	tion of Time-In	terleaved AE and Systems	OC Using s, IEEE, May		
EXAMINER	<u> </u>				DATE CO	NSIDERED			

**EXAMINER**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Page 2 of 10 APPLICATION NO. ATTY. DOCKET NO. **FORM PTO-1449** 1875.0560003 09/844,283 INVENTORS SECOND SUPPLEMENTAL BUCHWALD et al. INFORMATION DISCLOSURE STA ART UNIT **FILING DATE** April 30, 2001 2634 **U.S. PATENT DOCUMENTS** EXAMINER FILING DATE DOCUMENT NUMBER NAME CLASS SUB-CLASS INITIAL DATE AA2 5,768,268 06/1998 Kline et al. Cloke et al. AB2 5,822,143 10/1998 03/1999 Termerinac et al. 5.881,107 AC2 AD2 5,945,862 08/1999 Donnelly et al. 12/1999 Katakura AE2 6,005,445 **FOREIGN PATENT DOCUMENTS** EXAMINER COUNTRY CLASS SUB-CLASS TRANSLATION DATE INITIAL DOCUMENT NUMBER N/A 07/2001 WO AF2 WO 01/54317 09/2001 wo N/A AG2 WO 01/65788 N/A WO 11/2001 AH2 WO 01/84702 OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Fu, D. et al., "A Digital Background Calibration Technique for Time-Interleaved Analog-to-Digital Converters," IEEE Journal of Solid-State Circuits, IEEE, Vol. 33, No. 12, December 1998, pages AI2 1904-1911. Guizani, M. and Al-Ali, A., "PC-Compatible Optical Data Acquisition Unit," Instrumentation and AJ2 Measurement Technology Conference, IEEE, May 10-12, 1994, pages 1099-1102. Jeng, Y.-C., "Digital Spectra of Nonuniformly Sampled Signals: A Robust Sampling Time Offset Estimation Algorithm for Ultra High-Speed Waveform Digitizers Using Interleaving" Transactions on AK2 Instrumentation and Measurement, IEEE, Vol. 39, No. 1, February 1990, pp. 71-75. Mason, R. and Taylor, J.T., "High-Speed Electro-Optic Analogue to Digital Converters," IEEE AL2 International Symposium on Circuits and Systems, IEEE, 1993, pages 1081-1084. Niewczas, P. et al., "Error Analysis of an Optical Current Transducer Operating with a Digital Signal Processing System," IEEE Transactions on Instrumentation and Measurement, IEEE, Vol. 49, No. AM2 6, December 2000, pages 1254-1259. Petraglia, A. and Mitra, S., "Analysis of Mismatch Effects Among A/D Converters in a Time-Interleaved Waveform Digitizer," IEEE Transactions on Instrumentation and Measurement, IEEE, AN2 Vol. 40, No. 5, October 1991, pages 831-835. DATE CONSIDERED **EXAMINER EXAMINER**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449
SECOND SUPPLEMENTAL TOP AND THE STATEMENT OF THE STATEMENT O

DATE CONSIDERED

INFORMATION DISCLOSURE STA April 30, 2001 2634 U.S. PATENT DOCUMENTS **EXAMINER** CLASS SUB-CLASS FILING DATE INITIAL DOCUMENT NUMBER DATE NAME 6,009,534 12/1999 Chiu et al. AA3 AB3 6.038.269 03/2000 Raghavan 6,134,268 10/2000 McCoy AC3 AD3 6,329,859 B1 12/2001 Wu 03/2002 Chen AE3 6.359,486 B1 **FOREIGN PATENT DOCUMENTS EXAMINER** CLASS SUB-CLASS TRANSLATION DATE COUNTRY DOCUMENT NUMBER INITIAL N/A 11/2001 WO WO 01/84724 AF3 wo N/A 02/2002 AG3 WO 02/13424 N/A wo 09/2002 AH3 WO 02/071616 OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Sauer-Greff, W. et al., Maximum-Likelihood Sequence Estimation of Nonlinear Channels in High-Speed Optical Fiber Systems, April 6, 2001, Retrieved from the Internet at AI3 http://www.ftw.at/Dokumente/010406a.pdf, 29 pages. Williamson, R.C. et al., "Effects of Crosstalk in Demulitplexers for Photonic Analog-to-Digital Converters," Journal of Lightwave Technology, IEEE, Vol. 19, No. 2, February 2001, pages 230-AJ3 236. Yang, C-K., Design Techniques for High-Speed Chip-to-Chip Links, Retrieved from the Internet at AK3 http://web.doe.carleton.ca/courses/97578/topic5/Tutorial\_SerialLink.pdf, 31 pages. Yang, C-K. et al., "A Serial-Link Transceiver Based on 8-Gsamples/s A/D and D/A Converters in 0.25-µm CMOS," IEEE Journal of Solid-State Circuits, IEEE, Vol. 36, No. 11, November 2001, AL3 pages 1684-1692. Zuoxi, T., "Implementation of a Digital Multibeam Receiver Based on TMS320C80 for Laser AM3 Optoacoustic Remote Sensing," Proceedings of ICSP2000, IEEE, 2000, pages 2082-2084. Agazzi, O. and Lenosky, T., Algorithm to Postprocess Measured Data, IEEE 802.3ae Equalization AN3 Ad Hoc Group, January 10, 2001, 11 pages.

**EXAMINER**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

**EXAMINER** 

Page 4 of 10 ATTY. DOCKET NO. APPLICATION NO. 09/844,283 **FORM PTO-1449** 1875.0560003 **INVENTORS** SECOND SUPPLEMENTAL. BUCHWALD et al. INFORMATION DISCLOSURE STATE **ART UNIT** FILING DATE April 30, 2001 2634 **U.S. PATENT DOCUMENTS EXAMINER** CLASS SUB-CLASS FILING DATE DOCUMENT NUMBER INITIAL DATE NAME AA4 6,397,048 B1 05/2002 Toda Shah AB4 6,498,694 B1 12/2002 01/2003 Buchwald et al. 6,509,773 B2 AC4 AD4 6,791,388 B2 09/2004 Buchwald et al. 01/2002 Agazzi et al. 2002/0012152 A1 AE4 **FOREIGN PATENT DOCUMENTS EXAMINER** COUNTRY CLASS SUB-CLASS TRANSLATION DATE INITIAL DOCUMENT NUMBER Yes AF4 No Yes AG4 No Yes AH4 No OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Agazzi, O., A Link Model for Equalized Optical Receivers, IEEE 802.3ae Equalization Ad Hoc Al4 Group, March 11, 2001, 30 pages. Agazzi, O. et al., DSP-Based Equalization for Optical Channels: Feasibility of a VLSI AJ4 Implementation, IEEE 802.3ae, New Orleans, September 12-14, 2000, 39 pages. Agazzi, O. et al., Interim Observations on Multimode Optical Channels, IEEE 802.3ae -AK4 Equalization Ad Hoc, Tampa, November 5, 2000, 29 pages. Agazzi, O. et al., Measurements of DMD-Challenged Fibers at 3.125Gb/s, IEEE 802.3ae AL4 Equalization Ad Hoc, January 10, 2001, 33 pages. Agazzi, O. and Lenosky, T., "Measurement of Non-Stationarity of 10 Gb/s Multimode Fiber Links," AM4 November 24, 2000, 5 pages. Agazzi, O., 10 Gb/s PMD Using PAM-5 Modulation, IEEE 802.3, Dallas, January 18-20, 2000, 19 AN4 pages.

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

DATE CONSIDERED

**EXAMINER** 

**T** '

Page 5 of 10 ATTY, DOCKET NO. APPLICATION NO. **FORM PTO-1449** 1875.0560003 09/844,283 **INVENTORS** SECOND SUPPLEMENTAL BUCHWALD et al. INFORMATION DISCLOSURE STATE **FILING DATE ART UNIT** 2634 April 30, 2001 **U.S. PATENT DOCUMENTS EXAMINER** INITIAL DOCUMENT NUMBER DATE NAME CLASS SUB-CLASS FILING DATE AA5 04/2002 Buchwald et al. 2002/0039395 A1 04/2002 Buchwald et al. AB5 2002/0044617 A1 04/2002 Buchwald et al. 2002/0044618 A1 AC5 AD5 2002/0080898 A1 06/2002 Agazzi et al. 10/2004 Buchwald et al. AE5 2004/0212416 A1 **FOREIGN PATENT DOCUMENTS** EXAMINER CLASS SUB-CLASS **TRANSLATION** INITIAL DOCUMENT NUMBER DATE COUNTRY Yes AF5 No Yes AG5 No Yes AH5 No OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Agazzi, O. et al., 10 Gb/s PMD Using PAM-5 Trellis Coded Modulation, IEEE 802.3, Alburquerque, AI5 March 6-10, 2000, 38 pages. Bhatt, V., Equalization Ad Hoc Concluding Report, IEEE P802.3ae Plenary, March 2001, 12 pages. AJ5 Bingham, J.A.C., "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come," AK5 IEEE Communications Magazine, IEEE, Vol. 28, No. 5, pages 5-8 and 11-14. Chiddix, J. et al., "AM Video on Fiber in CATV Systems: Need and Implementation," IEEE Journal AL5 on Selected Areas in Communications, IEEE, Vol. 8, No. 7, September 1990, pages 1229-1239. Darcie, T., "Subcarrier Multiplexing for Lightwave Networks and Video Distribution Systems," IEEE Journal on Selected Areas in Communications, IEEE, Vol. 8, No. 7, September 1990, pages 1240-AM5 1248. Fettweis, G., "High-Rate Viterbi Processor: A Systolic Array Solution," IEEE Journal on Selected AN5 Areas in Communications, IEEE, Vol. 8, No. 8, October 1990, pages 1520-1534. **EXAMINER** DATE CONSIDERED **EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to Applicant.

**FORM PTO-1449** 

ATTY. DOCKET NO. 1875.0560003 INVENTORS BUCHWALD et al.

APPLICATION NO. 09/844,283

Page 6 of 10

SECOND SUPPLEMENTAL

INICO	SECO	ND SUPPLEMENTAL	BORNS .	BUCHWALD et al.						
INFORMATION DISCLOSURE STATEMENT				FILING DATE April 30, 2001	l l	ART UNIT				
_			U.S. PAT	ENT DOCUMENTS	2034					
XAMINER NITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE			
	AA6									
	AB6									
	AC6									
	AD6									
	AE6									
			FOREIGN P	ATENT DOCUMENTS		· · · · · · · · · · · · · · · · · · ·				
XAMINER IITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	<del> </del>			
	AF6						Ye:			
	AG6						Ye:			
	AH6						Ye:			
···		OTHER DOCUMENT	S (Including	Author, Title, Date, Pe	ertinent Pages,	etc.)				
	AJ6	Forney, Jr., G.D., "The Viterbi Algorithm," <i>Proceedings of the IEEE</i> , IEEE, Vol 61, No. 3, March 1973, pages 268-278.								
	AK6	Frazier, H., IEEE 802.3 Higher Speed Study Group, IEEE 802.3 HSSG, Kauai, Hawaii, November 9, 1999, 24 pages.								
	AL6	Giaretta, G. and Lenosky, T., <i>Adaptive Equalization of DMD Challenged Multimode Fiber at 1300 mm</i> , IEEE P802.3ae Plenary, March 11, 2001, 10 pages.								
	AM6	Hatamian, M. et al., "Design Considerations for Gigabit Ethernet 1000Base-T Twisted Pair Transceivers," IEEE 1998 Custom Integrated Circuits Conference, IEEE, 1998, pages 335-342.								
	AN6	Isaacs, M <i>et al., Mea</i> IEEE 802.3ae Equali	surements o	f Fiber Responses at 5 ( oc, March 11, 2001, 18 p	Gb/s Data Rate pages.	Using 850nr	n VCSELs,			
EXAMINER					DATE CO	NSIDERED				

Page 7 of 10 ATTY, DOCKET NO. APPLICATION NO. FORM PTO-1449 1875.0560003 09/844,283 **INVENTORS** SECOND SUPPLEMENTAL BUCHWALD et al. INFORMATION DISCLOSURE STATEMENT **ART UNIT FILING DATE** 2634 April 30, 2001 **U.S. PATENT DOCUMENTS EXAMINER** CLASS SUB-CLASS | FILING DATE INITIAL DOCUMENT NUMBER DATE NAME AA7 AB7 AC7 AD7 AE7 **FOREIGN PATENT DOCUMENTS** EXAMINER TRANSLATION CLASS SUB-CLASS DOCUMENT NUMBER DATE COUNTRY INITIAL AF7 No Yes AG7 No Yes AH7 No OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Kanno, N. and Ito, K., "Fiber-Optic Subcarrier Multiplexing Video Transport Employing Multilevel QAM," IEEE Journal on Selected Areas in Communications, IEEE, Vol. 8, No. 7, September 1990, AI7 pages 1313-1319. Kasper, B.L., "Equalization of Multimode Optical Fiber Systems," The Bell System Technical Journal, American Telephone and Telegraph Company, Vol. 61, No. 7, September 1982, pages AJ7 1367-1388. Kasturia, S. and Winters, J., "Techniques for High-Speed Implementation of Nonlinear Cancellation," IEEE Journal on Selected Areas in Communications, IEEE, Vol. 9, No. 5, June 1991, AK7 pages 711-717. Lenosky, T., A Unified Method of Calculating PMD-induced Pulse Broadening, IEEE 802.3ae AL7 Equalization Ad Hoc Meeting, Tampa, Florida, November 5, 2000, 8 pages. Lenosky, T. and Giaretta, G., Five Gb/s Multimode DMD at 850 nm: Real-Time Data and Equalizer AM7 Simulations, Finisar Corporation, March 11, 2001, 13 pages. Lenosky, T. et al., Measurements of DMD-Challenged Fibers at 850nm and 2Gb/s Data Rate, IEEE AN7 802.3ae - Equalization Ad Hoc Group, January 10, 2001, 21 pages. DATE CONSIDERED **EXAMINER** 

**EXAMINER**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Page 8 of 10 ATTY. DOCKET NO. 1875.0560003 APPLICATION NO. 09/844,283 INVENTORS BUCHWALD et al.

INFORMATION DISCLOSURE STATEMENT				FILING DATE ART UNIT April 30, 2001 2634					
			U.S. PA	TENT DOCUMENTS					
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE		
	AA8								
	AB8								
	AC8								
	AD8								
	AE8								
			FOREIGN	PATENT DOCUMENTS		<u> </u>			
EXAMINER						CUD CLASS	TRANSLATION		
INITIAL	AF8	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	Yes		
							No Yes		
	AG8						No Yes		
	AH8						No		
		OTHER DOCUMENTS	S (Includin	g Author, Title, Date, P	ertinent Pages,	etc.)			
	AJ8	Liu, M-K. and Modestou, P., "Multilevel Signaling and Pulse Shaping for Spectrum Efficiency in Subcarrier Multiplexing Transmission," <i>IEEE Journal of Lightwave Technology</i> , IEEE, Vol. 12, No. 7, pages 1239-1246.  Olshansky, R. et al., "Subcarrier Multiplexed Coherent Lightwave Systems for Video Distribution," <i>IEEE Journal on Selected Areas in Communications</i> , IEEE, Vol. 8, No. 7, September 1990, pages 1268-1275.  Olshansky, R. et al., "Subcarrier Multiplexed Lightwave Systems for Broadband Distribution," <i>IEEE Journal of Lightwave Technology</i> , IEEE, Vol. 7, No. 9, September 1989, pages 1329-1341.							
	AK8								
	AL8								
	AM8	Otte, S. and Rosenkranz, W., "A Decision Feedback Equalizer for Dispersion Compensation in High Speed Optical Transmission Systems," <i>International Conference on Transparent Optical Networks</i> , IEEE, 1999, pages 19-22.							
	AN8	Parhi, K. et al., Paral IEEE 802.3ae Task F		entation of the DSP Func ch 2000, 12 pages.	tions of the PAM	I-5 10Gb/s T	ransceiver,		
EXAMINER		1	<del></del>		DATE CO	ONSIDERED	<u> </u>		

Page 9 of 10 ATTY, DOCKET NO. APPLICATION NO. ∄875.<u>0560003</u> **FORM PTO-1449** 09/844,283 **INVENTORS** SECOND SUPPLEMENTAL BUCHWALD et al. INFORMATION DISCLOSURE STATEME ART UNIT **FILING DATE** 2634 April 30, 2001 **U.S. PATENT DOCUMENTS** EXAMINER DOCUMENT NUMBER DATE CLASS SUB-CLASS | FILING DATE INITIAL NAME AA9 AB9 AC9 AD9 AE9 **FOREIGN PATENT DOCUMENTS** EXAMINER DOCUMENT NUMBER CLASS SUB-CLASS **TRANSLATION** DATE COUNTRY INITIAL Yes AF9 No Yes AG9 No Yes AH9 No OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Peral, E. et al., Measurements of time variation in DMD-challenged multimode fiber at 1310nm for AI9 10GE equalizer applications, IEEE P802.3ae Equalization Ad Hoc, IEEE, March 2001, 19 pages. Personick, S.D., "Baseband Linearity and Equalization in Fiber Optic Digital Communication Systems," Bell System Technical Journal, American Telephone and Telegraph Company, Vol. 52, AJ9 No. 7, September 1973, pages 1175-1194. Personick, S.D., "Receiver Design for Digital Fiber Optic Communication Systems, I," Bell System Technical Journal, American Telephone and Telegraph Company, Vol. 52, No. 6, July-August AK9 1973, pages 843-874. Personick, S.D., "Receiver Design for Digital Optic Systems," National Telecommunications AL9 Conference, IEEE, Atlanta, Georgia, November 26-28, 1973, Vol. 1, pages 8E-1 - 8E-4. Vorenkamp, P. et al., Analog Interface for 10-Gb/s Ethernet, IEEE 802.3ae Task Force, March AM9 2000, 13 pages. Winters, J. and Gitlin, R., "Electrical Signal Processing Techniques in Long-Haul Fiber-Optic Systems," IEEE Transactions on Communications, IEEE, Vol. 38, No. 9, September 1990, pages AN9 1439-1453. DATE CONSIDERED **EXAMINER** EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

SECOND SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT (1987)

Page 10 of 10

ATTY. DOCKET NO. APPLICATION NO. 09/844,283

INVENTORS
BUCHWALD et al.

FILING DATE ART UNIT

INFORMATION DISCLOSURE SY April 30, 2001 2634 **U.S. PATENT DOCUMENTS EXAMINER** FILING DATE DOCUMENT NUMBER DATE NAME CLASS SUB-CLASS INITIAL **AA10 AB10** AC10 AD10 **AE10 FOREIGN PATENT DOCUMENTS** EXAMINER CLASS SUB-CLASS TRANSLATION DATE COUNTRY INITIAL DOCUMENT NUMBER Yes AF10 No Yes AG10 No Yes AH10 No OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) Winters, J. et al., "Reducing the Effects of Transmission Impairments in Digital Fiber Optic AI10 Systems," IEEE Communications Magazine, IEEE, June 1993, pages 68-76. Progress Report on Equalization of Multimode Fibers, IEEE 802.3ae Ad Hoc Group on AJ10 Equalization, January 12, 2001, 16 pages. Alderrou, D. et al., XAUI/XGXS Proposal, IEEE 802.3ae Task Force, May 23-25, 2000, 28 pages. AK10 Winters, J.H. and Gitlin, R., "Electrical Signal Processing Techniques in Long-Haul, Fiber-Optic Systems," IEEE International Conference on Communications, IEEE, Vol. 1, April 16-19, 1990, AL10 pages 0397-0403. **AM10 AN10** DATE CONSIDERED **EXAMINER** 

**EXAMINER**: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.